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1 [Choosing a GUI library for your embedded device](#)

Martin Hansen

 January 2007 **Linux Journal**, Volume 2007 Issue 153

Publisher: Specialized Systems Consultants, Inc.

 Full text available: [html\(2.08 MB\)](#) Additional Information: [full citation](#), [abstract](#)

GUI design with QTopia and Nano-X.



2 [Oral session 6: interfaces and usability: Evaluating usability based on multimodal information: an empirical study](#)



Tao Lin, Atsumi Imamiya

 November 2006 **Proceedings of the 8th international conference on Multimodal interfaces ICMI '06**

Publisher: ACM Press

 Full text available: [pdf\(591.56 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

New technologies are making it possible to provide an enriched view of interaction for researchers using multimodal information. This preliminary study explores the use of multiple information streams in usability evaluation. In the study, easy, medium and difficult versions of a game task were used to vary the levels of mental effort. Multimodal data streams during the three versions were analyzed, including eye tracking, pupil size, hand movement, heart rate variability (HRV) and subjectively ...

Keywords: eye tracking, multimodal, physiological measures, usability

3 [Demo session 1: Eye/gaze tracking in web, image and video documents](#)



Djeraba Chabane, Stanislas Lew, Dan Simovici, Sylvain Mongy, Nacim Ihaddadene

 October 2006 **Proceedings of the 14th annual ACM international conference on Multimedia MULTIMEDIA '06**

Publisher: ACM Press

 Full text available: [pdf\(190.91 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Our demo focuses on eye tracking on web, image and video data. We use some state-of-the-art measurements, such as scan path, to determine how the user sees web documents, images and videos. Our approach is characterised by automatic eye/gaze tracking with non intrusive sensors, mainly infrared cameras of web, image and video documents. We analyse eye/gaze tracking concerns spatial regions of static documents

(images and web pages) and spatial zones of dynamic documents (video, sequence of web pa ...

Keywords: documents, eye/gaze, eyepath, heartbeat, images, respiration, stress, tracking, videos, web

4 Energy awareness: Energy consumption and conservation in mobile peer-to-peer systems



Selim Gurun, Priya Nagpurkar, Ben Y. Zhao

September 2006 **Proceedings of the 1st international workshop on Decentralized resource sharing in mobile computing and networking MobiShare '06**

Publisher: ACM Press

Full text available:  pdf(130.80 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Today's mobile devices are growing in number and computational resources. Devices capable of storing gigabytes of digital content are becoming ubiquitous, making them an ideal platform for peer-to-peer content delivery and sharing. However, the always on communication patterns of P2P networks is not a natural fit for energy-constrained mobile devices. In this paper, we perform a detailed study of energy consumption of a structured P2P overlay on a PDA device. Using actual energy measurements, we ...

Keywords: DHTs, mobility, peer-to-peer, structured overlays

5 Smart wireless association: Improved access point selection



Anthony J. Nicholson, Yatin Chawathe, Mike Y. Chen, Brian D. Noble, David Wetherall

June 2006 **Proceedings of the 4th international conference on Mobile systems, applications and services MobiSys 2006**

Publisher: ACM Press

Full text available:  pdf(451.33 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents Virgil, an automatic access point discovery and selection system. Unlike existing systems that select access points based entirely on received signal strength, Virgil scans for all available APs at a location, quickly associates to each, and runs a battery of tests to estimate the quality of each AP's connection to the Internet. Virgil also probes for blocked or redirected ports, to guide AP selection in favor of preserving application services that are currently in use. Resu ...

Keywords: 802.11, access point selection, opportunistic connectivity, public networks, wireless networking

6 Sensor networks and performance analysis: snBench: programming and virtualization framework for distributed multitasking sensor networks



Michael J. Ocean, Azer Bestavros, Assaf J. Kfoury

June 2006 **Proceedings of the 2nd international conference on Virtual execution environments VEE '06**

Publisher: ACM Press

Full text available:  pdf(207.60 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We envision future Sensor Networks (SNs) that will be composed of a hybrid collection of a variety of sensing devices embedded into shared environments. In such environments it follows that the embedded SN infrastructure would also be shared by various users, occupants, or administrators of these shared spaces. As such a clear need emerges to virtualize the SN, sharing the resources of the SN across various tasks executing simultaneously. To achieve this goal, we present the snBench ...

Keywords: distributed resource management, domain specific languages, programming environments, sensor networks

7 Performance, reliability & scalability: SCTP: an innovative transport layer protocol for the web



Preethi Natarajan, Janardhan R. Iyengar, Paul D. Amer, Randall Stewart

May 2006 **Proceedings of the 15th international conference on World Wide Web WWW '06**

Publisher: ACM Press

Full text available: pdf(327.59 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We propose using the Stream Control Transmission Protocol (SCTP), a recent IETF transport layer protocol, for reliable web transport. Although TCP has traditionally been used, we argue that SCTP better matches the needs of HTTP-based network applications. This position paper discusses SCTP features that address: (i) head-of-line blocking within a single TCP connection, (ii) vulnerability to network failures, and (iii) vulnerability to denial-of-service SYN attacks. We discuss our experience in m ...

Keywords: SCTP, fault-tolerance, head-of-line blocking, stream control transmission protocol, transport layer service, web applications, web transport

8 Location and membership services: RaWMS -: random walk based lightweight membership service for wireless ad hoc network



Ziv Bar-Yossef, Roy Friedman, Gabriel Kliot

May 2006 **Proceedings of the seventh ACM international symposium on Mobile ad hoc networking and computing MobiHoc '06**

Publisher: ACM Press

Full text available: pdf(233.59 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

RaWMS is a novel lightweight random membership service for ad hoc networks. The service provides each node with a partial uniformly chosen view of network nodes. Such a membership service is useful, e.g., in data dissemination algorithms, lookup and discovery services, peer sampling services, and complete member-ship construction. The design of RaWMS is based on a novel re-verse random walk (RW) sampling technique. The paper includes a formal analysis of both the reverse RW sampling technique an ...

Keywords: ad hoc networks, membership service, random walk

9 Dependable and adaptive distributed systems (DADS): Combining supervised and unsupervised monitoring for fault detection in distributed computing systems



Haifeng Chen, Guofei Jiang, Cristian Ungureanu, Kenji Yoshihira

April 2006 **Proceedings of the 2006 ACM symposium on Applied computing SAC '06**

Publisher: ACM Press

Full text available: pdf(261.35 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Fast and accurate fault detection is becoming an essential component of management software for mission critical systems. A good fault detector makes possible to initiate repair actions quickly, increasing the availability of the system. The contribution of this paper is twofold. First a new concept of supervised and unsupervised monitoring is proposed for system fault detection. We use a statistical method, canonical correlation analysis (CCA), to model the contextual dependencies between syste ...

Keywords: canonical correlation analysis, distributed computing, fault detection, internet

services, supervised monitoring

10 Novel methods: emotions, gestures, events: A continuous and objective evaluation of emotional experience with interactive play environments



Regan L. Mandryk, M. Stella Atkins, Kori M. Inkpen

April 2006 **Proceedings of the SIGCHI conference on Human Factors in computing systems CHI '06**

Publisher: ACM Press

Full text available:  pdf(727.30 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Researchers are using emerging technologies to develop novel play environments, while established computer and console game markets continue to grow rapidly. Even so, evaluating the success of interactive play environments is still an open research challenge. Both subjective and objective techniques fall short due to limited evaluative bandwidth; there remains no corollary in play environments to task performance with productivity systems. This paper presents a method of modeling user emotional ...

Keywords: EMG, GSR, HR, emotion, evaluation methodology, fun, fuzzy logic, games, physiology, play

11 Experience reports: Influences of personal preference on product usability



Shinyoung Park, Akira Harada, Hiroya Igarashi

April 2006 **CHI '06 extended abstracts on Human factors in computing systems CHI '06**

Publisher: ACM Press

Full text available:  pdf(510.52 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This study intended to demonstrate experimentally that user trust or affection for a brand affects the results of usability tests. For the experimental method, experimentees were exposed to products made by companies they preferred and did not preferred, and these products were then tested with a group of tasks for each product. For the test assessments, NASA-TLX was utilized to measure the mental and physical demands on the experimentees, along with the measure of error rate and time of product ...

Keywords: NASA-TLX, personal preference (brand image), product usability

12 FreeLoader: Scavenging Desktop Storage Resources for Scientific Data



Sudharshan S. Vazhkudai, Xiaosong Ma, Vincent W. Freeh, Jonathan W. Strickland, Nandan Tammineedi, Stephen L. Scott

November 2005 **Proceedings of the 2005 ACM/IEEE conference on Supercomputing SC '05**

Publisher: IEEE Computer Society

Full text available:  pdf(410.23 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

High-end computing is suffering a data deluge from experiments, simulations, and apparatus that creates overwhelming application dataset sizes. End-user workstations-despite more processing power than ever before-are ill-equipped to cope with such data demands due to insufficient secondary storage space and I/O rates. Meanwhile, a large portion of desktop storage is unused. We present the FreeLoader framework, which aggregates unused desktop storage space and I/O bandwidth into a shared cache/sc ...

Keywords: Distributed storage, storage scavenging, storage cache, serverless storage system, scientific data management, parallel I/O, striped storage

13 Gaming on the edge: using seams in ubicomp games



 Matthew Chalmers, Marek Bell, Barry Brown, Malcolm Hall, Scott Sherwood, Paul Tennent
June 2005 **Proceedings of the 2005 ACM SIGCHI International Conference on
Advances in computer entertainment technology ACE '05**

Publisher: ACM Press

Full text available:  [pdf\(219.39 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Outdoor multi-player games are an increasingly popular application area for ubiquitous computing, supporting experimentation both with new technologies and new user experiences. This paper presents an outdoor ubicomp game that exploits the gaps or seams that exist in complex computer systems. *Treasure* is designed so that players move in and out of areas of wireless network coverage, taking advantage not only of the connectivity within a wireless 'hotspot' but of the lack of connectivity o ...

Keywords: mobile games, seamful design, ubiquitous computing

14 Evaluation methods: Physiological indicators for the evaluation of co-located collaborative play



 Regan L. Mandryk, Kori M. Inkpen
November 2004 **Proceedings of the 2004 ACM conference on Computer supported cooperative work CSCW '04**

Publisher: ACM Press

Full text available:  [pdf\(804.29 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Emerging technologies offer new ways of using entertainment technology to foster interactions between players and connect people. Evaluating collaborative entertainment technology is challenging because success is not defined in terms of productivity and performance, but in terms of enjoyment and interaction. Current subjective methods are not sufficiently robust in this context. This paper describes an experiment designed to test the efficacy of physiological measures as evaluators of collab ...

Keywords: EMG, GSR, collaboration, fun, heart rate, physiology

15 System support for pervasive applications



 Robert Grimm, Janet Davis, Eric Lemar, Adam Macbeth, Steven Swanson, Thomas Anderson, Brian Bershad, Gaetano Borriello, Steven Gribble, David Wetherall
November 2004 **ACM Transactions on Computer Systems (TOCS)**, Volume 22 Issue 4

Publisher: ACM Press

Full text available:  [pdf\(1.82 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Pervasive computing provides an attractive vision for the future of computing. Computational power will be available everywhere. Mobile and stationary devices will dynamically connect and coordinate to seamlessly help people in accomplishing their tasks. For this vision to become a reality, developers must build applications that constantly adapt to a highly dynamic computing environment. To make the developers' task feasible, we present a system architecture for pervasive computing, called & ...

Keywords: Asynchronous events, checkpointing, discovery, logic/operation pattern, migration, one.world, pervasive computing, structured I/O, tuples, ubiquitous computing

16 Collision detection and proximity queries

compare data location schemes for a large self-organizing storage cluster that can quickly adapt to the additions or departures of storage nodes. We further present an efficient location scheme that differentiates between small and large file blocks for reduced management overhead compared to uniform strategies. In our protocol, sm ...

20 A churn-resistant peer-to-peer web caching system



Prakash Linga, Indranil Gupta, Ken Birman

October 2003 **Proceedings of the 2003 ACM workshop on Survivable and self-regenerative systems: in association with 10th ACM Conference on Computer and Communications Security SSRS '03**

Publisher: ACM Press

Full text available: pdf(1.07 MB) Additional Information: [full citation](#), [abstract](#), [references](#)

Denial of service attacks on peer-to-peer (p2p) systems can arise from sources otherwise considered non-malicious. We focus on one such commonly prevalent source, called "churn". Churn arises from continued and rapid arrival and failure (or departure) of a large number of participants in the system, and traces from deployments have shown that it can lead to extremely stressful networking conditions. It has the potential to increase host loads and block a large fraction of normal insert and lo ...

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Sunil Hadap, Dave Eberle, Pascal Volino, Ming C. Lin, Stephane Redon, Christer Ericson
August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**

Publisher: ACM Press

Full text available: [pdf\(11.22 MB\)](#) Additional Information: [full citation](#), [abstract](#)

This course will primarily cover widely accepted and proved methodologies in collision detection. In addition more advanced or recent topics such as continuous collision detection, ADFs, and using graphics hardware will be introduced. When appropriate the methods discussed will be tied to familiar applications such as rigid body and cloth simulation, and will be compared. The course is a good overview for those developing applications in physically based modeling, VR, haptics, and robotics.

17 Extending the Representational State Transfer (REST) Architectural Style for Decentralized Systems

Rohit Khare, Richard N. Taylor

May 2004 **Proceedings of the 26th International Conference on Software Engineering ICSE '04**

Publisher: IEEE Computer Society

Full text available: [pdf\(1.13 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Because it takes time and trust to establish agreement, traditional consensus-based architectural styles cannot safely accommodate resources that change faster than it takes to transmit notification of that change, nor resources that must be shared across independent agencies. The alternative is decentralization: permitting independent agencies to make their own decisions. Our definition contrasts with that of distribution, in which several agents share control of a single decision. Ultimately, the physi ...

18 Industrial practice 2: Edge computing: extending enterprise applications to the edge of the internet



A. Davis, J. Parikh, W. E. Weihi

May 2004 **Proceedings of the 13th international World Wide Web conference on Alternate track papers & posters WWW Alt. '04**

Publisher: ACM Press

Full text available: [pdf\(224.06 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Content delivery networks have evolved beyond traditional distributed caching. With services such as Akamai's Edge Computing it is now possible to deploy and run enterprise business Web applications on a globally distributed computing platform, to provide subsecond response time to end users anywhere in the world. Additionally, this distributed application platform provides high levels of fault-tolerance and scalability on-demand to meet virtually any need. Application resources can be provisioned ...

Keywords: Internet applications, N-tier applications, Web services, distributed applications, edge computing, grid computing, split-tier applications, utility computing, web applications

19 An Efficient Data Location Protocol for Self-organizing Storage Clusters

Hong Tang, Tao Yang

November 2003 **Proceedings of the 2003 ACM/IEEE conference on Supercomputing SC '03**

Publisher: IEEE Computer Society

Full text available: [pdf\(345.61 KB\)](#) Additional Information: [full citation](#), [abstract](#)

Component additions and failures are common for large-scale storage clusters in production environments. To improve availability and manageability, we investigate and


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21 [Game programming with the sdl](#)

Bob Pendleton

 June 2003 **Linux Journal**, Volume 2003 Issue 110

Publisher: Specialized Systems Consultants, Inc.

 Full text available: [html\(18.76 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

With this well-tested library, you can easily develop games for Linux and non-Linux platforms.

22 [Review: SCO Linux 4](#)

Steve R. Hastings

 June 2003 **Linux Journal**, Volume 2003 Issue 110

Publisher: Specialized Systems Consultants, Inc.

 Full text available: [html\(11.87 KB\)](#) Additional Information: [full citation](#), [index terms](#)

23 [Middleware for context sensitive mobile applications](#)

K. A. Hawick, H. A. James

 January 2003 **Proceedings of the Australasian information security workshop conference on ACSW frontiers 2003 - Volume 21 ACSW Frontiers '03**

Publisher: Australian Computer Society, Inc.

 Full text available: [pdf\(916.67 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Contextual information such as spatial location can significantly enhance the utility of mobile applications. We introduce the concept of active preferences that represent a combination of user preference information and choices combined with spatial or temporal information. Active preferences set the policy on how a mobile application should customise its behaviour not just for a particular user but as that user moves to different locations and interacts with other mobile users or with fixed lo ...

Keywords: location context, middleware, mobile devices, personal context

24 [Physical interface: TAG: a Tiny AGgregation service for ad-hoc sensor networks](#)



Samuel Madden, Michael J. Franklin, Joseph M. Hellerstein, Wei Hong

 December 2002 **ACM SIGOPS Operating Systems Review**, Volume 36 Issue SI

Publisher: ACM PressFull text available:  [pdf\(2.19 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We present the Tiny AGgregation (TAG) service for aggregation in low-power, distributed, wireless environments. TAG allows users to express simple, declarative queries and have them distributed and executed efficiently in networks of low-power, wireless sensors. We discuss various generic properties of aggregates, and show how those properties affect the performance of our in network approach. We include a performance study demonstrating the advantages of our approach over traditional centralized ...

25 Groupware infrastructure: Using speakeasy for ad hoc peer-to-peer collaboration



W. Keith Edwards, Mark W. Newman, Jana Z. Sedivy, Trevor F. Smith, Dirk Balfanz, D. K. Smetters, H. Chi Wong, Shahram Izadi

November 2002 **Proceedings of the 2002 ACM conference on Computer supported cooperative work CSCW '02**

Publisher: ACM PressFull text available:  [pdf\(346.03 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Peer-to-peer systems appear promising in terms of their ability to support ad hoc, spontaneous collaboration. However, current peer-to-peer systems suffer from several deficiencies that diminish their ability to support this domain, such as inflexibility in terms of discovery protocols, network usage, and data transports. We have developed the Speakeasy framework, which addresses these issues, and supports these types of applications. We show how Speakeasy addresses the shortcomings of current p ...

Keywords: ad-hoc collaboration, casca, peer-to-peer, speakeasy

26 Engineering web cache consistency



Jian Yin, Lorenzo Alvisi, Mike Dahlin, Arun Iyengar

August 2002 **ACM Transactions on Internet Technology (TOIT)**, Volume 2 Issue 3

Publisher: ACM PressFull text available:  [pdf\(403.96 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Server-driven consistency protocols can reduce read latency and improve data freshness for a given network and server overhead, compared to the traditional consistency protocols that rely on client polling. Server-driven consistency protocols appear particularly attractive for large-scale dynamic Web workloads because dynamically generated data can change rapidly and unpredictably. However, there have been few reports on engineering server-driven consistency for such workloads. This article repo ...

Keywords: Cache coherence, cache consistency, dynamic content, lease, scalability, volume

27 The state of the art in locally distributed Web-server systems



Valeria Cardellini, Emiliano Casalicchio, Michele Colajanni, Phillip S. Yu

June 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 2

Publisher: ACM PressFull text available:  [pdf\(1.41 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The overall increase in traffic on the World Wide Web is augmenting user-perceived response times from popular Web sites, especially in conjunction with special events. System platforms that do not replicate information content cannot provide the needed scalability to handle large traffic volumes and to match rapid and dramatic changes in the

number of clients. The need to improve the performance of Web-based services has produced a variety of novel content delivery architectures. This article w ...

Keywords: Client/server, World Wide Web, cluster-based architectures, dispatching algorithms, distributed systems, load balancing, routing mechanisms

28 Performance: Cooperative leases: scalable consistency maintenance in content distribution networks



Anoop Ninan, Purushottam Kulkarni, Prashant Shenoy, Krithi Ramamritham, Renu Tewari
May 2002 **Proceedings of the 11th international conference on World Wide Web WWW '02**

Publisher: ACM Press

Full text available: pdf(201.14 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, we argue that cache consistency mechanisms designed for stand-alone proxies do not scale to the large number of proxies in a content distribution network and are not flexible enough to allow consistency guarantees to be tailored to object needs. To meet the twin challenges of scalability and flexibility, we introduce the notion of cooperative consistency along with a mechanism, called *cooperative leases*, to achieve it. By supporting &Dgr;-consistency semantics and by using ...

Keywords: content distribution networks, data consistency, data dissemination, dynamic data, leases, pullC, push, scalability, world wide web

29 Web Performance Optimization: Cluster-based online monitoring system of web traffic



Yun Mao, Kang Chen, Dongsheng Wang, Weimin Zheng
November 2001 **Proceedings of the 3rd international workshop on Web information and data management WIDM '01**

Publisher: ACM Press

Full text available: pdf(453.72 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Web traffic has been increasing and evolving rapidly in recent years. It is important to measure the volume and characteristic of such dominant traffic to understand large-scale user access pattern and analyze performance of Web applications. Among the common methods of Web measurements, the passive way using packet monitoring is more advantageous since it provides comprehensive information and is transparent to end-users. However, the throughput of current packet monitoring system is limited by ...

30 Technical Session: The implementation of prometheus: a case study



Muna Sakya, Brad Beecher
October 2001 **Proceedings of the 29th annual ACM SIGUCCS conference on User services SIGUCCS '01**

Publisher: ACM Press

Full text available: pdf(160.51 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

In this paper, we describe the implementation of Prometheus, an online course delivery tool at The University of Texas at Austin. When George Washington University (GWU) created Prometheus for the thousands of courses they now have online, they wanted to create a tool that did more than just put course content on the web. GWU wanted to use a product that was flexible and scalable for future enhancements. The University of Texas at Austin's (UT Austin) College of Engineering licensed Prometheus i ...

Keywords: coldfusion, courseware, online courses, prometheus

31 Engineering server-driven consistency for large scale dynamic Web services



Jian Yin, Lorenzo Alvisi, Mike Dahlin, Arun Iyengar

April 2001 **Proceedings of the 10th international conference on World Wide Web WWW '01**

Publisher: ACM Press

Full text available: pdf(291.44 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: Web cache consistency, dynamic content, performance, scalability, volume lease

32 Agent-based modeling and simulation: "Plug and test": software agents in virtual environments

Adeline M. Uhrmacher, Bernd G. Kullick

December 2000 **Proceedings of the 32nd conference on Winter simulation WSC '00**

Publisher: Society for Computer Simulation International

Full text available: pdf(67.97 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

James- A Java Based agent modeling environment for simulation has been developed to support the compositional construction of test beds for multi-agent systems and their execution in distributed environments. The modeling formalism of James imposes only few constraints on the modeling of agents and facilitates a "plug and test" with pieces of agent code which has been demonstrated in earlier work. However, even entire agents can be run in James as they are run in their run-time environment. The ...

33 Papers: A web server's view of the transport layer



Mark Allman

October 2000 **ACM SIGCOMM Computer Communication Review**, Volume 30 Issue 5

Publisher: ACM Press

Full text available: pdf(1.23 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

This paper presents observations of traffic to and from a particular World-Wide Web server over the course a year and a half. This paper presents a longitudinal look at various network path properties, as well as the implementation status of various protocol options and mechanisms. In particular, this paper considers how World-Wide Web clients utilize TCP connections to transfer web data; the deployment of various TCP and HTTP options; the range of round-trip times observed in the network; packe ...

34 Design of a social interaction environment for electronic marketplaces



Younghye Jung, Alison Lee

August 2000 **Proceedings of the conference on Designing interactive systems: processes, practices, methods, and techniques DIS '00**

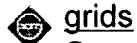
Publisher: ACM Press

Full text available: pdf(618.23 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents the design of an interaction environment for fostering social interactions in electronic marketplaces. The environment incorporates a novel, spatially-organized, and interactive site map. The map provides visibility of people, activities, and social interactions and incorporates mechanisms for social interactions. Four design constraints abstracted from prior findings in CSCW guided the development of the map: sociality, scalability, spatiality, and imageability. The d ...

Keywords: activities, crowds, e-commerce, imageability, interaction design, map, online communities, people, scalability, social groups, social interaction, social navigation, social visualization, sociality, spatiality

35 CoG kits: a bridge between commodity distributed computing and high-performance



grids

Gregor von Laszewski, Ian Foster, Jarek Gawor

June 2000 **Proceedings of the ACM 2000 conference on Java Grande JAVA '00**

Publisher: ACM Press

Full text available: [pdf\(1.29 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

36 A scalable Web cache consistency architecture



Haobo Yu, Lee Breslau, Scott Shenker

August 1999 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Applications, technologies, architectures, and protocols for computer communication SIGCOMM '99**, Volume 29 Issue 4

Publisher: ACM Press

Full text available: [pdf\(1.71 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The rapid increase in web usage has led to dramatically increased loads on the network infrastructure and on individual web servers. To ameliorate these mounting burdens, there has been much recent interest in web caching architectures and algorithms. Web caching reduces network load, server load, and the latency of responses. However, web caching has the disadvantage that the pages returned to clients by caches may be *stale*, in that they may not be consistent with the version currently o ...

37 A High Availability Clustering Solution



Phil Lewis

August 1999 **Linux Journal**

Publisher: Specialized Systems Consultants, Inc.

Full text available: [html\(34.77 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Mr. Lewis tells us how he designed and implemented a simple high-availability solution for his company

38 The gateway system: uniform Web based access to remote resources



Geoffrey Fox, Tomasz Haupt, Erol Akarsu, Alexey Kalinichenko, Kang-Seok Kim, Praveen Sheethalnath, Choon-Han Youn

June 1999 **Proceedings of the ACM 1999 conference on Java Grande JAVA '99**

Publisher: ACM Press

Full text available: [pdf\(759.70 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

39 Multicast shared virtual worlds using VRML97





John A. Carson, Adrian F. Clark

February 1999 **Proceedings of the fourth symposium on Virtual reality modeling language VRML '99**

Publisher: ACM Press

Full text available: [pdf\(1.34 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: IP multicasting, MBone, Virtual Reality Modelling Language (VRML), World Wide Web, multi-user virtual reality, shared virtual worlds

- 40 Simulation and C41 data collection in support of force XXI training 
William J. Frederic, Mark B. Hamby, James S. Mathison, Ronald D. Nugen
December 1998 **Proceedings of the 30th conference on Winter simulation WSC '98**
Publisher: IEEE Computer Society Press
Full text available:  [pdf\(1.07 MB\)](#) Additional Information: [full citation](#), [index terms](#)

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 Terms used **web page heartbeat**

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41 [A reliable multicast framework for light-weight sessions and application level framing](#)

 Sally Floyd, Van Jacobson, Ching-Gung Liu, Steven McCanne, Lixia Zhang
 December 1997 **IEEE/ACM Transactions on Networking (TON)**, Volume 5 Issue 6

Publisher: IEEE Press

Full text available: pdf(310.74 KB)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)
Keywords: Internetworking, computer network performance, computer networks

42 [Dynamic network reconfiguration support for mobile computers](#)

Jon Inouye, Jim Binkley, Jonathan Walpole

 September 1997 **Proceedings of the 3rd annual ACM/IEEE international conference on Mobile computing and networking MobiCom '97**

Publisher: ACM Press

Full text available: pdf(1.60 MB)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

43 [Lessons from Wall Street: case studies in configuration, tuning, and distribution](#)

Dennis Shasha

 June 1997 **ACM SIGMOD Record , Proceedings of the 1997 ACM SIGMOD international conference on Management of data SIGMOD '97**, Volume 26 Issue 2

Publisher: ACM Press

Full text available: pdf(593.61 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Consider a setting in which Database speed and reliability can make the difference between prosperity and ruin. Money for information systems is no object. Data must be accessible from many points on the globe with subsecond response. The financial industry is exactly such an environment. This tutorial presents case studies in configuration, tuning, and distribution drawn from financ ...

44 [A reliable multicast framework for light-weight sessions and application level framing](#)

Sally Floyd, Van Jacobson, Steve McCanne, Ching-Gung Liu, Lixia Zhang

 October 1995 **ACM SIGCOMM Computer Communication Review , Proceedings of the**

**conference on Applications, technologies, architectures, and protocols
for computer communication SIGCOMM '95**, Volume 25 Issue 4

Publisher: ACM Press

Full text available:  pdf(1.67 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper describes SRM (Scalable Reliable Multicast), a reliable multicast framework for application level framing and light-weight sessions. The algorithms of this framework are efficient, robust, and scale well to both very large networks and very large sessions. The framework has been prototyped in wb, a distributed whiteboard application, and has been extensively tested on a global scale with sessions ranging from a few to more than 1000 participants. The paper describes the principles tha ...

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1 Virtual world content creation & management -- II: Dynamic creation of interactive mixed reality presentations

Krzysztof Walczak, Rafal Wojciechowski

 November 2005 **Proceedings of the ACM symposium on Virtual reality software and technology VRST '05**

Publisher: ACM Press

 Full text available: [pdf\(2.59 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we describe a method of dynamic creation of interactive presentations for Mixed Reality environments. The presentations are created automatically for collections of multimedia objects arbitrarily arranged in virtual presentation spaces stored in a database. Users can navigate between the spaces using Web and 3D multimedia contents. The objects in each space are presented through a presentation template, which determines both the visualization and the interaction aspects of the pre ...

Keywords: VRML, X?VRML, interaction scenarios, mixed reality, virtual reality

2 Web and e-business application: Dynamically generating web application fragments from page templates

Uwe Zdun

 March 2002 **Proceedings of the 2002 ACM symposium on Applied computing SAC '02**

Publisher: ACM Press

 Full text available: [pdf\(900.91 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Web-based applications are typically required to be highly customizable and configurable. New application requirements have to be introduced rapidly, often without stopping the running application process. Moreover, in many cases the same business logic has to be presented to different channels and/or user interfaces. In this paper we present a dynamic page template architecture for decomposing configurable and representational fragments of the application from the business logic. Page templates ...

Keywords: dynamic software architecture, object-Oriented Scripting, web engineering

3 Consistency management for distributed collaboration

Jonathan Rees, Sarah Ferguson, Sankar Virdhagriswaran



June 1999 **ACM Computing Surveys (CSUR)**

Publisher: ACM Press

Full text available: [pdf\(31.03 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

4 Archiving telemeetings



Constantin Arapis

November 1999 **Proceedings of the eighth international conference on Information and knowledge management CIKM '99**

Publisher: ACM Press

Full text available: [pdf\(1.65 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents a prototype system for modeling and managing the complete life-time of telemeetings/teleconferences. The system provides services for modeling telemeetings, storing telemeetings in a telemeeting database, annotating telemeetings and querying the telemeeting database.

Keywords: teleconference management, telemeeting archiving

5 Special issue on wireless extensions to the internet: Fast handovers and context transfers in mobile networks



Rajeev Koodli, Charles E. Perkins

October 2001 **ACM SIGCOMM Computer Communication Review**, Volume 31 Issue 5

Publisher: ACM Press

Full text available: [pdf\(1.16 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We describe recent work enabling fast handovers and context transfer between access routers offering Internet connectivity for mobile (often wireless) nodes. We present our framework for engineering general context transfer solutions, and a protocol which uses the framework to provide a simple yet general mechanism for carrying out context transfers during handovers. Since our mechanism operates at the network level, we expect that it will be the most expedient way to provide for seamless han ...

Keywords: IPv6, context transfer, fast handover, mobile IP, mobile network

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 Terms used **web page page identifier**

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1 [Dynamic personalization of web sites without user intervention](#)



Ranieri Baraglia, Fabrizio Silvestri

 February 2007 **Communications of the ACM**, Volume 50 Issue 2

Publisher: ACM Press

Full text available: pdf(415.13 KB)

html(1.80 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A novel online recommender system builds profiling models and offers suggestions without the user taking the lead.

2 [Redundancy: Using free web storage for data backup](#)



Avishay Traeger, Nikolai Joukov, Josef Sipek, Erez Zadok

 October 2006 **Proceedings of the second ACM workshop on Storage security and survivability StorageSS '06**

Publisher: ACM Press

Full text available: pdf(205.78 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Backing up important data is crucial. A variety of causes can lead to data loss, such as disk failures, administration errors, virus infiltration, theft, and physical damage to equipment. Users and businesses have important information that is difficult to replace, such as financial records and contacts. Reliable backups are crucial because some data cannot be replaced, while recreating other data can be expensive in terms of time and money. We propose two methods which leverage various types of ...

Keywords: backup, web services

3 [Research papers: WikiTrails: augmenting Wiki structure for collaborative, interdisciplinary learning](#)



Silvan Reinhold

 August 2006 **Proceedings of the 2006 international symposium on Wikis WikiSym '06**

Publisher: ACM Press

Full text available: pdf(624.69 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Wikis are currently in high demand in a large variety of fields, due to their simplicity and flexible nature. Documentation, reporting, project management, online glossaries and dictionaries, discussion groups, or information systems are just a few examples of possible Wiki applications. Their popularity has also begun drawing the attention of

teachers and educators, who realize that Wikis facilitate collaborative finding, shaping, and sharing of knowledge, as well as communication, all of which ...

Keywords: Wiki content structure, collaborative studies, interdisciplinary e-learning, path guidance, path-centric navigation, user tracking

4 Stanford WebBase components and applications



Junghoo Cho, Hector Garcia-Molina, Taher Haveliwala, Wang Lam, Andreas Paepcke, Sriram Raghavan, Gary Wesley

May 2006 **ACM Transactions on Internet Technology (TOIT)**, Volume 6 Issue 2

Publisher: ACM Press

Full text available: pdf(609.18 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We describe the design and performance of WebBase, a tool for Web research. The system includes a highly customizable crawler, a repository for collected Web pages, an indexer for both text and link-related page features, and a high-speed content distribution facility. The distribution module enables researchers world-wide to retrieve pages from WebBase, and stream them across the Internet at high speed. The advantage for the researchers is that they need not all crawl the Web before beginning t ...

Keywords: WebBase Web crawler, distribution, hyperlink Indexing, site crawling

5 WEBVIEW: an SQL extension for joining corporate data to data derived from the web



Charles A. Wood, Terence T. Ow

September 2005 **Communications of the ACM**, Volume 48 Issue 9

Publisher: ACM Press

Full text available: pdf(551.16 KB) html(21.94 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Using SQL and database technology to seamlessly retrieve information from any corporate or external Web site.

6 Late breaking results: short papers: Interactive web usage mining with the navigation visualizer



Eelco Herder, Harald Weinreich

April 2005 **CHI '05 extended abstracts on Human factors in computing systems CHI '05**

Publisher: ACM Press

Full text available: pdf(721.25 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Web usage mining, the analysis of user navigation paths through web sites, is a common technique for evaluating site designs or adaptive hypermedia techniques. However, often it is hard to relate aggregated clusters or measures to actual user navigation behavior. By contrast, basic graph-based visualizations of user navigation paths are easier to interpret, but it is difficult to find effective views that convey all the required information. In this paper we present the *Navigation Visualizer* < ...

Keywords: access tracking, interactive visualization, user navigation, web sites, web usage mining

7 Novel interfaces: The site browser: catalyzing improvements in hypertext organization





David Gibson

August 2004 **Proceedings of the fifteenth ACM conference on Hypertext and hypermedia HYPERTEXT '04**

Publisher: ACM Press

Full text available: pdf(1.62 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The Site Browser endeavors to build an overview browsing system for the entire Web. Overview browsing represents an alternative to the search-based view of information work, and does so by providing a consistent set of summary views which can be browsed interactively. The views partition and linearize the corpus for ready understanding and exploration. They show a web site's relation to other sites, the broad nature of the information it contains and how it is structured, and how it has changed ...

Keywords: aggregation, overview browsing

8 Web data extraction and structure mining: Datarover: a taxonomy based crawler for automated data extraction from data-intensive websites



H. Davulcu, S. Koduri, S. Nagarajan

November 2003 **Proceedings of the 5th ACM international workshop on Web information and data management WIDM '03**

Publisher: ACM Press

Full text available: pdf(704.25 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The advent of e-commerce has created a trend that brought thousands of catalogs online. Most of these websites are "taxonomy-directed". A Web site is said to be "taxonomy-directed" if it contains at least one taxonomy for organizing its contents and it presents the instances belonging to a category in a regular fashion. This paper describes the DataRover system, which can automatically crawl and extract products from taxonomy-directed online catalogs. DataRover utilizes heuristic rules to discover ...

Keywords: web annotation, web data extraction, web data integration

9 Industrial/government track: Golden Path Analyzer: using divide-and-conquer to cluster Web clickstreams



Kamal Ali, Steven P. Ketchpel

August 2003 **Proceedings of the ninth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '03**

Publisher: ACM Press

Full text available: pdf(433.92 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper describes a novel algorithm and deployed system Golden Path Analyzer (GPA) that analyzes clickstreams of people trying to complete the same task on a website. It finds the shortest, successful paths taken by users - 'golden paths' - and uses these as seeds for clickstream clusters. Other users are assigned to a cluster if their clickstream is a supersequence of the golden path. The advantages of this approach are that the resulting clusters are easily comprehended, they are few in number ...

Keywords: Web-mining, clustering, divide-and-conquer

10 Adaptive algorithms for set containment joins



Sergey Melnik, Hector Garcia-Molina

March 2003 **ACM Transactions on Database Systems (TODS)**, Volume 28 Issue 1

Publisher: ACM Press

Full text available:  pdf(485.76 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A set containment join is a join between set-valued attributes of two relations, whose join condition is specified using the subset (\subseteq) operator. Set containment joins are deployed in many database applications, even those that do not support set-valued attributes. In this article, we propose two novel partitioning algorithms, called the Adaptive Pick-and-Sweep Join (APSJ) and the Adaptive Divide-and-Conquer Join (ADCJ), which allow computing set containment joins efficiently. We show that ...

11 A composable framework for secure multi-modal access to internet services from Post-PC devices

Steven J. Ross, Jason L. Hill, Michael Y. Chen, Anthony D. Joseph, David E. Culler, Eric A. Brewer

October 2002 **Mobile Networks and Applications**, Volume 7 Issue 5

Publisher: Kluwer Academic Publishers

Full text available:  pdf(340.33 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The Post-PC revolution is bringing information access to a wide range of devices beyond the desktop, such as public kiosks, and mobile devices like cellular telephones, PDAs, and voice based vehicle telematics. However, existing deployed Internet services are geared toward the secure rich interface of private desktop computers. We propose the use of an infrastructure-based secure proxy architecture to bridge the gap between the capabilities of Post-PC devices and the requirements of Internet ser ...


Keywords: internet, middleware, post-PC, security, transcoding

12 The state of the art in automating usability evaluation of user interfaces

Melody Y. Ivory, Marti A Hearst

December 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 4

Publisher: ACM Press

Full text available:  pdf(2.31 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Usability evaluation is an increasingly important part of the user interface design process. However, usability evaluation can be expensive in terms of time and human resources, and automation is therefore a promising way to augment existing approaches. This article presents an extensive survey of usability evaluation methods, organized according to a new taxonomy that emphasizes the role of automation. The survey analyzes existing techniques, identifies which aspects of usability evaluation aut ...

Keywords: Graphical user interfaces, taxonomy, usability evaluation automation, web interfaces

13 Information Retrieval and Text Mining: Reorganizing web sites based on user access patterns

Yongjian Fu, Mario Creado, Chunhua Ju

October 2001 **Proceedings of the tenth international conference on Information and knowledge management CIKM '01**

Publisher: ACM Press

Full text available:  pdf(528.33 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, an approach for reorganizing Web sites based on user access patterns is

proposed. The approach consists of three steps: preprocessing, page classification, and site reorganization. In preprocessing, pages on a Web site are processed to create an internal representation of the site, and page access information of its users is extracted from its server log. In page classification, the Web pages on the site are classified into two categories, index pages and content pages, based on t ...

Keywords: access patterns, adaptive web wites, page classification, site reorganization, web usage mining

14 Searching the Web



Arvind Arasu, Junghoo Cho, Hector Garcia-Molina, Andreas Paepcke, Sriram Raghavan
August 2001 **ACM Transactions on Internet Technology (TOIT)**, Volume 1 Issue 1

Publisher: ACM Press

Full text available: pdf(319.98 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

(36)

We offer an overview of current Web search engine design. After introducing a generic search engine architecture, we examine each engine component in turn. We cover crawling, local Web page storage, indexing, and the use of link analysis for boosting search performance. The most common design and implementation techniques for each of these components are presented. For this presentation we draw from the literature and from our own experimental search engine testbed. Emphasis is on introduci ...

Keywords: HITS, PageRank, authorities, crawling, indexing, information retrieval, link analysis, search engine

15 Building a distributed full-text index for the web



Sergey Melink, Sriram Raghavan, Beverly Yang, Hector Garcia-Molina
July 2001 **ACM Transactions on Information Systems (TOIS)**, Volume 19 Issue 3

Publisher: ACM Press

Full text available: pdf(651.72 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We identify crucial design issues in building a distributed inverted index for a large collection of Web pages. We introduce a novel pipelining technique for structuring the core index-building system that substantially reduces the index construction time. We also propose a storage scheme for creating and managing inverted files using an embedded database system. We suggest and compare different strategies for collecting global statistics from distributed inverted indexes. Finally, we present pe ...

Keywords: Distributed indexing, Embedded databases, Inverted files, Pipelining, Text retrieval

16 Linux Apprentice: Linux Tools for the Web

Ralph Krause
June 2000 **Linux Journal**

Publisher: Specialized Systems Consultants, Inc.

Full text available: html(14.54 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A look at some tools to help you easily create and maintain your web site.

17 R x W: a scheduling approach for large-scale on-demand data broadcast

Demet Aksoy, Michael Franklin

December 1999 **IEEE/ACM Transactions on Networking (TON)**, Volume 7 Issue 6

Publisher: IEEE Press

Full text available:  [pdf\(332.50 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

18 Linking and messaging from real paper in the Paper PDA



Jeremy M. Heiner, Scott E. Hudson, Kenichiro Tanaka

November 1999 **Proceedings of the 12th annual ACM symposium on User interface software and technology UIST '99**

Publisher: ACM Press

Full text available:  [pdf\(344.36 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

It is well known that paper is a very fluid, natural, and easy to use medium for manipulating some kinds of information. It is familiar, portable, flexible, inexpensive, and offers good readability properties. Paper also has well known limitations when compared with electronic media. Work in hybrid paper electronic interfaces seeks to bring electronic capabilities to real paper in order to obtain the best properties of each. This paper describes a hybrid paper electronic system — the ...

Keywords: augmented reality, hybrid paper electronic interfaces, hyperlinking, interaction on paper, interaction techniques

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John Colter, Netscape Navigator

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museum +"natural history" dinosaur -Chicago

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museum +"natural history" dinosaur -Chicago

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museum +art

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museum +"natural history" dinosaur -Chicago

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IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

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IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

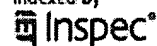
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